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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An oxygen-delivery matrix, comprising, a biocompatible, single unit construct formed matrix, wherein the matrix is formed prior to gas production, comprising a swellable cross-linked polymer network and oxygen in closed cells in the formed matrix, wherein the oxygen is formed in the matrix during the manufacture of the matrix, creating multiple oxygen-rich closed cells within the matrix; and wherein the oxygen is dispersed throughout the polymer network provided by the one-time reaction of a catalyst present in the formed matrix and a reagent solution contacting the catalyst to release oxygen in at least closed cells in the formed matrix.
2. (Original) The matrix of Claim 1, further comprising at least one active agent.
3. (Previously Presented) The matrix of Claim 1, wherein the biocompatible single unit polymer network comprises polyacrylamide.
4. (Currently Amended) The matrix of Claim 3, wherein the oxygen delivery matrix further comprises a non-gellable polysaccharide.
5. (Canceled) The matrix of Claim 1, wherein the oxygen is provided by the formation of a closed cell foam by the in situ production of oxygen.
6. (Currently Amended) The matrix of Claim 37 1, wherein the generation of oxygen results is formed from the decomposition of a peroxide.
7. (Canceled) The matrix of Claim 6, wherein the decomposition of the peroxide is caused by the catalyst.

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8. (Currently Amended) The matrix of Claim 1, wherein the oxygen is formed by the action a catalyst wherein the catalyst is a carbonate salt, a salt of iodide, manganese dioxide, cupric chloride, or an enzyme.

9-11. (Canceled)

12. (Currently Amended) The matrix of Claim 1, wherein the polymer network comprises a natural or synthetic polymer, mixtures of natural polymers or mixtures of synthetic polymers.

13-20. (Cancelled)

21. (Currently Amended) The matrix of Claim 2, wherein the at least one active agent comprises gases, anti-microbial agents, anti-fungal agents, anti-bacterial agents, anti-viral agents, anti-parasitic agents, mycoplasma treatments, growth factors, proteins, nucleic acids, angiogenic factors, anesthetics, mucopolysaccharides, metals, pharmaceuticals, chemotherapeutic agents, herbicides, growth inhibitors, anti-fungal agents, anti-bacterial agents, anti-viral agents, and anti-parasitic agents, wound healing agents, growth promoters, indicators of change in the environment, enzymes, nutrients, vitamins, minerals, carbohydrates, fats, fatty acids, nucleosides, nucleotides, amino acids, sera, antibodies and fragments thereof, lectins, immune stimulants, immune suppressors, coagulation factors, neurochemicals, cellular receptors, antigens, adjuvants, or radioactive materials.

22. (Previously Presented) The matrix of Claim 21, wherein the gases comprise nitrogen, carbon dioxide, and noble gases.

23. (Previously Presented) The matrix of Claim 21, wherein the anti-microbial agents comprises isoniazid, ethambutol, pyrazinamide, streptomycin, clofazimine, rifabutin,

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fluoroquinolones, ofloxacin, sparfloxacin, rifampin, azithromycin, clarithromycin, dapsone, tetracycline, erythromycin, ciprofloxacin, doxycycline, ampicillin, amphotericin B, ketoconazole, fluconazole, pyrimethamine, sulfadiazine, clindamycin, lincomycin, pentamidine, atovaquone, paromomycin, diclazuril, acyclovir, trifluorouridine, foscarnet, penicillin, gentamicin, ganciclovir, iatroconazole, miconazole, Zn-pyritohione, silver salts, chloride, bromide, iodide, or periodate.

24. (Previously Presented) The matrix of Claim 21, wherein the growth factors comprise basic fibroblast growth factor, acidic fibroblast growth factor, nerve growth factor, epidermal growth factor, insulin-like growth factors 1 and 2, platelet derived growth factor, tumor angiogenesis factor, vascular endothelial growth factor, corticotropin releasing factor, transforming growth factors α and β , interleukin-8, granulocyte-macrophage colony stimulating factor, interleukins, or interferons.
25. (Previously Presented) The matrix of Claim 21, wherein the mucopolysaccharides comprise heparin, heparin sulfate, heparinoids, dermatan sulfate, pentosan polysulfate, chondroitin sulfate, hyaluronic acid, cellulose, agarose, chitin, dextran, carrageenan, linoleic acid, or allantoin.

26. (Previously Presented) The matrix of Claim 21, wherein the proteins comprise collagen, cross-linked collagen, fibronectin, laminin, elastin, or cross-linked elastin.

27. (Previously Presented) The matrix of Claim 21, wherein the metals comprise zinc or silver.

28. (Previously Presented) The matrix of Claim 1, wherein the matrix comprises a stranded configuration.

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29. (Currently Amended) The matrix of Claim 27, wherein the polymer network comprises a natural or synthetic polymer, mixtures of natural polymers or mixtures of synthetic polymers.

30. (Currently Amended) The matrix of Claim 21, wherein the polymer network comprises collagen, gelatin, chondroitin, calmodulin, cellulose, agar, agarose, animal hide, hyaluronic acid, dextran, alginate, polylysine, resorbable polymers, polyacrylamide, polymethacrylate, polyacrylate, polybuterate, polyurethane foam, polyether, silastic, silicone elastomer, rubber, nylon, vinyl or cross-linked dextran.

31. (Previously Presented) The matrix of Claim 1, further comprising a water loss control agent comprising petrodatum, glycolipids, ceramides, free fatty acids, cholesterol, triglycerides, sterylesters, cholestryl sulfate, linoleic ethyl ester, or silicone oil.

32. (Previously Presented) The matrix of Claim 1, further comprising a plasticizer comprising glycerol, water, propylene glycol, or butanol.

33. (Previously Presented) The matrix of Claim 1, further comprising a hydration control agent comprising isopropyl alcohol, ethanol, glycerol, butanol, or propylene glycol.

34. (Previously Presented) The matrix of Claim 4, wherein the non-gellable polysaccharide is guar gum.

35. (Previously Presented) The matrix of Claim 8, wherein the enzyme is catalase.

36. (Currently Amended) The matrix of Claim 2, wherein the polymer network comprises collagen, gelatin, chondroitin, calmodulin, cellulose, agar, agarose, animal hide, hyaluronic acid, dextran, alginate, polylysine, resorbable polymers, polyacrylamide,

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polymethacrylate, polyacrylate, polybuterate, polyurethane foam, polyether, silastic, silicone elastomer, rubber, nylon, vinyl or cross-linked dextran.

37. (Currently Amended) The ~~oxygen delivery~~ matrix of Claim 1, comprising the biocompatible, single unit construct formed cross-linked polymer matrix further comprises a non-gellable polysaccharide, and oxygen gas incorporated therein, after contacting the formed matrix with the reactant solution wherein the cross-linked polymer matrix is polyacrylamide.

38. (Currently Amended) A gas delivery device, comprising a biocompatible, single unit construct of a formed matrix, wherein the matrix is formed prior to gas incorporation, comprising a swellable cross-linked polymer network, at least one active agent, and a gas in closed cells formed in the matrix, wherein the gas is the results of a single reaction of a catalyst present in the formed matrix and a reactant solution contacting the formed matrix, oxygen, and the oxygen is formed in the matrix during the manufacture of the matrix, creating multiple oxygen-rich closed cells within the matrix; and wherein the oxygen is dispersed throughout the polymer network.

39. (Currently Amended) A gas delivery device, comprising a biocompatible, single unit construct of a formed matrix, wherein the matrix is formed prior to gas incorporation, comprising a swellable cross-linked polyacrylamide polymer network, at least one active agent, and a catalyst that produces a gas oxygen in closed cells formed in the matrix when contacted by a reactant solution during the manufacture of the matrix, creating multiple oxygen-rich closed cells within the matrix; and wherein the oxygen is dispersed throughout the polymer network.